

S/N 10/550118

In response to the Office Action dated June 10, 2010

REMARKS

Favorable reconsideration of this application is requested in view of the following remarks.

35 USC § 112 Rejections

Independent claims 3 and 5 are rejected under 35 USC § 112, second paragraph, as being indefinite. The rejection contends that "a motor controlling element" is set forth in two separate instances within claim 3. Applicants contend that this rejection is in error. The feature "a motor controlling element" is only set forth once in each of claims 3 and 5 (line 9 from the end of each claim). Withdrawal of the rejection is requested.

35 USC § 103 Rejections

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utenick (US 4,429,262) in view of Amrhein (US 5,274,313). Applicants respectfully traverse this rejection.

Claim 1 is directed to an ultrasonic probe having an encoder correction ROM configured to store a previously measured swing scanning angle of the ultrasonic transducer with respect to each of a plurality of count values, wherein the count values are obtained by counting pulses from the rotary encoder over an entire swing range of the ultrasonic transducer, and configured to output the previously measured and stored swing scanning angle of the ultrasonic transducer.

A benefit of these features is that it is possible to correct an error of a nonlinear swing angle caused by the angle detection sensor and the mechanical structure.

As discussed in the rejection, Utenick does not teach that the count values are obtained by counting pulses from the rotary encoder over an entire swing range of the ultrasonic transducer, and configured to output the previously measured and stored swing scanning angle of the ultrasonic transducer.

Amrhein discloses a curve memory that is used to correct the data depending on the rotation angle of a motor, such as torque fluctuation (col. 1, lines 8-25 and col. 12, lines 29-35). Amrhein does not disclose correcting the rotation angle itself.

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Moreover, Amrhein does not refer to the problem that the pulse value of the angle encoder and the actual rotation angle deviate from a linear or proportional relationship due to the rotation angle or rotation direction. Even if the apparatus of Amrhein is intended to show and correct various effects that can change the operation consistency, this does not indicate the correction of the rotation angle. Therefore, there is no motivation to use the curve memory of Amrhein, in which the correction values of torque at each a rotation angle are stored, for storing correction values to correct each rotation angle over the entire swing range.

Thus, the combination of Utenick and Amrhein does not suggest the invention of claim 1 and the rejection should be withdrawn.

Claim 2 is allowable at least by virtue of its dependence on independent claim 1. The rejection of this dependent claim should be withdrawn. Applicants do not concede the correctness of the rejection.

Claims 1-6 are rejected under 35 USC 103(a) as being unpatentable over Utenick (US 4,429,262) in view of Amrhein (US 5,274,313) and Pini (US 5,159,931). Applicants respectfully traverse the rejection.

Claims 1, 3 and 5 are directed to an ultrasonic probe having an encoder correction ROM configured to store a previously measured swing scanning angle of the ultrasonic transducer with respect to each of a plurality of count values, wherein the count values are obtained by counting pulses from the rotary encoder over an entire swing range of the ultrasonic transducer, and configured to output the previously measured and stored swing scanning angle of the ultrasonic transducer.

Amrhein is cited in the rejection for the same reasons as the rejection above. Amrhein does not disclose the features of claims 1, 3 and 5 as discussed above for claim 1. Therefore, Amrhein does not remedy the deficiencies of Utenick and Pini and claims 1, 3 and 5 are allowable.

Claims 2, 4 and 6 are allowable at least by virtue of their respective dependence on independent claims 1, 3 and 5. The rejection of these dependent claims should be withdrawn. Applicants do not concede the relevance of the reference to the dependent claims.

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Applicants respectfully request that a timely Notice of Allowance be issued in this case.

If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.



Dated: September 3, 2010

Respectfully submitted,

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